Installation Instructions

Model AMP4IC6

(Speaker Combination Models AMP4S61 / AMP4S62 / AMP4S64)

SELF-AMPLIFIED IN-CEILING SPEAKERS
(4 INPUTS/SOURCES)

c UL us
Listed

OWI®

Established 1978

OWI Incorporated

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www.owi-inc.com

Technical Support: 310-515-1900

CAUTION

RISK OF ELECTRIC SHOCK

DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK
DO NOT REMOVE COVER (OR BACK)
NO USER-SERVICEABLE PARTS INSIDE
REFER SERVICING TO QUALIFIED PERSONNEL

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions - All the safety and operation instructions should be read before this OWI product is operated.
2. Keep these instructions - The safety and operating instructions should be kept for future reference.
3. Heed all warnings - All warnings on this product and in these operating instructions should be followed.
4. Follow all instructions - All operating and other instructions should be followed.
5. Do not use this apparatus near water - for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, near a swimming pool, swamp or salivating St. Bernard dog, etc.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions. - This OWI product should be situated so that its location or position does not interfere with its proper ventilation. For example, the Component should not be situated on a bed, sofa, rug, or similar surface that may block any ventilation openings, or placed in a built-in installation such as a bookcase or cabinet that may impede the flow of air through ventilation openings.
8. Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wider blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit the apparatus.
11. Only use attachment/accessories specified by the manufactures.
12. Use only with the cart, stand, tripod, bracket or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped. The user should not attempt to service this OWI product beyond those means described in this operating manual. All other servicing should be referred to the OWI Service Department.
15. To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
16. To prevent electric shock, do not use this polarized plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.
17. Exposure to extremely high noise levels may cause permanent hearing loss. Individuals vary considerably in susceptibility to noise-induced hearing loss, but nearly everyone will lose some hearing if exposed to sufficiently intense noise for a period of time. The U.S. Government's Occupational Safety and Health Administration (OSHA) has specified the permissible noise level exposures shown in the following chart. According to OSHA, any exposure in excess of these permissible limits could result in some hearing loss. To ensure against potentially dangerous exposure to high sound pressure levels, it is recommended that all persons exposed to equipment capable of producing high sound pressure levels use hearing protectors while the equipment is in operation. Ear plugs or protectors in the ear canals or over the ears must be worn when operating the equipment in order to prevent a permanent hearing loss if exposure is in excess of the limits set forth here.
18. OWI recommends that this apparatus is to be placed on a switched power outlet, one that switches both sides of the line and has contact separation of at least 3mm.

Duration Per Day	**Sound Level dab**	**Typical**
In Hours	Slow Response	Example
8	90	Duo in small club
6	92	
4	95	Subway Train
3	97	
2	100	Very loud classical music
1.5	102	
1	105	Patrice screaming at Ron about deadlines
0.5	110	
0.25 or less	115	Loudest parts at a rock concert

Installation Instructions
Model AMP4IC6
(UL Listed)

AMP4IC6 carton includes the following items:

1. One (1) each AMP4IC6
2. One (1) each UL Listed Power Supply

Introduction:

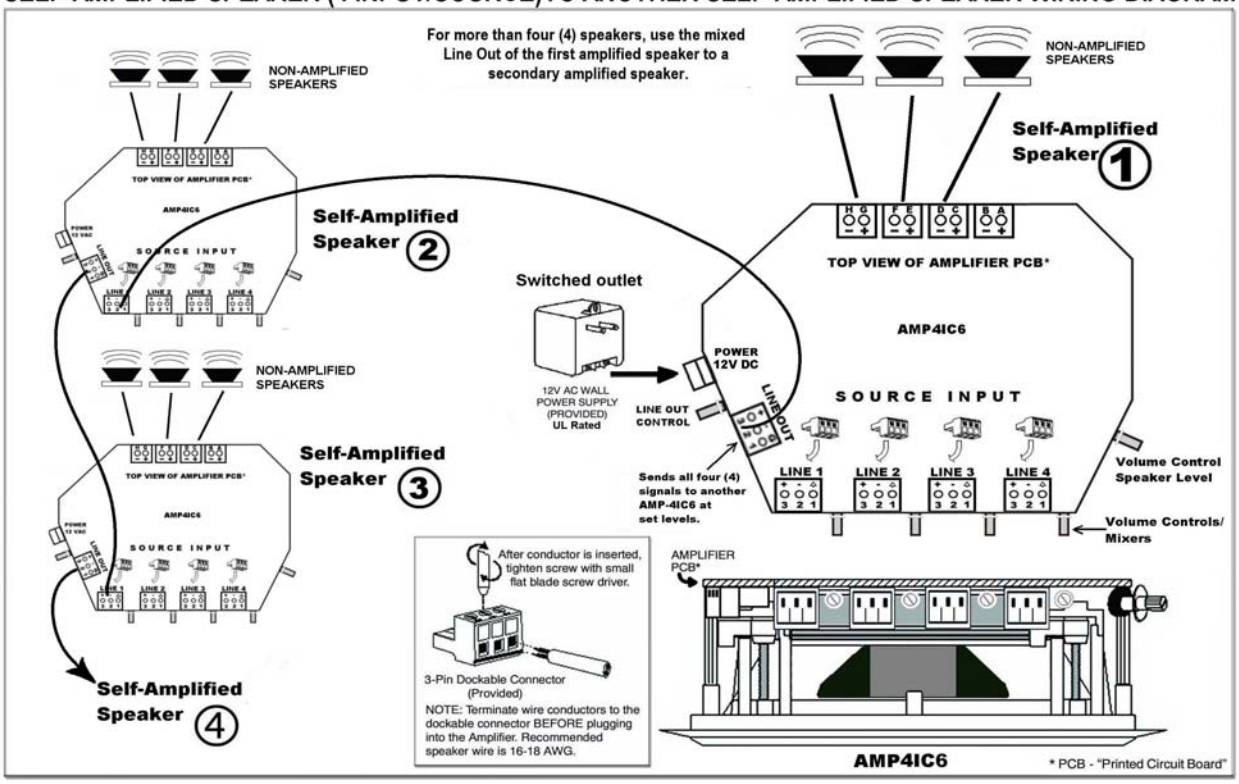
The AMP4IC6 is designed to provide a 6.5 inch speaker that is self powered allowing line input audio that is either balanced or unbalanced to provide the input signal. The power amplifier provides up to 25 watts of power. It has enough power to allow up to four total speakers to be powered by one powered speaker. The additional three can be non-powered. This would then allow each speaker to have approximately 5 watts of power. Five watts would be enough power for background music, voice paging or many voice applications.

Specifications:

Model	**AMP4IC6**
Frequency Response	50 Hz to 15kHz. HF is optimized to enhance frequency response of the speaker.
THD	<.1%
S/N	>90dB
Input Configuration	Differential (noise reducing)
Minimum Common Mode Rejection	40dB
Maximum Power Output	25watts
At load impedance	4 Ohms (2 speakers in parallel or 4 speakers in series parallel)
Minimum Power Supply Voltage	8 Volts
Maximum Supply Voltage	14 Volts
Maximum current protected	Yes
Short Circuit protected	Yes
One wire to ground protected	Yes
Minimum Load Impedance	3.2 Ohm
Input Load Impedance	10K Ohm
Maximum number of Amplifiers on one line	4
Power Supply	12 Volts AC 12- 14V AC
Inputs	4 Balanced Line
Outputs	1 Balanced Line
Controls	4 Input level Controls 1 Line out Level Control 1 Amplifier Gain Control
Outputs	4 Output Jacks allowing automatic correct wiring for series parallel connection by simply plugging each speaker into its jack.
Heat sink	An oversize heat-sink is provided
High Voltage	The highest voltage on the PCB is 12 volts
Protection	The amplifier is protected against short and overheating
Plastic	Fire rated V-0
Available Backcan (Sold Separately)	UL Listed and Plenum rated
Warranty	1 year

OWI MODEL AMP4IC6

SELF-AMPLIFIED SPEAKER (4 INPUT/SOURCE)TO ANOTHER SELF-AMPLIFIED SPEAKER WIRING DIAGRAM


For more than four (4) speakers, use the mixed Line Out of the first amplified speaker to a secondary amplified speaker.
NON-AMPLIFIED SPEAKERS
Self-Amplified Speaker 1
Self-Amplified Speaker 2
Self-Amplified Speaker 3
Self-Amplified Speaker 4
TOP VIEW OF AMPLIFIER PCB*
AMP4IC6
SOURCE INPUT
Switched outlet
12V AC WALL POWER SUPPLY (PROVIDED) UL Rated
POWER 12V DC
LINE OUT CONTROL
LINE OUT
Sends all four (4) signals to another AMP-4IC6 at set levels.
LINE 1
LINE 2
LINE 3
LINE 4
Volume Control Speaker Level
Volume Controls/ Mixers
After conductor is inserted, tighten screw with small flat blade screw driver.
3-Pin Dockable Connector (Provided)
NOTE: Terminate wire conductors to the dockable connector BEFORE plugging into the Amplifier. Recommended speaker wire is 16-18 AWG.
AMPLIFIER PCB*
AMP4IC6
* PCB - "Printed Circuit Board"

Trouble Shooting Guide

1. No output: Disconnect any secondary speakers and check for operation of the primary speaker only. If still there is no output, check for loose screws on the green input connector. It is easy to think the wires are secure in the connector and one wire is not. Tug on each wire to make sure each is tight.
2. Intermittent output: Check for shorted output causing the amplifier to into and output protection. Check each input wire for loose screws.
3. Distortion: Do not power more than one AMP4IC6 on one power supply. While it will work, it will cause distortion.
4. No output, check to see that the power on light is on. It is located on the main PCB. If it is off, the power supply is either bad or has come loose in the power socket.
5. Hum, for single ended inputs, there is a need for a jumper between – and the ground screw. Most of the time, the jumper is needed.

LIMITED WARRANTY

1. The AMP4IC6 has been thoroughly tested and inspected at the factory. It is warranted for one (1) year from date of purchase.
   IT IS THE OWNERS' RESPONSIBILITY TO ESTABLISH THE DATE OF PURCHASE BY ACCEPTABLE EVIDENCE AT TIME SERVICE IS SOUGHT.
2. Any unit which in the judgment of OWI Inc. is defective or develops defects under normal use will be replaced or repaired without cost within the warranty period.
3. This warranty will be considered void if unit has been dropped, misused, abused and/or altered in any manner, overdriven with excessive amplification exceeding manufacturer's specification, improperly serviced or accidental damage.
4. OWI Inc. shall have no liability whatsoever for consequential damage. The sole responsibility and discretion of OWI Inc. under this warranty shall be limited to the repair of the product or replacement thereof.
5. IMPORTANT: This warranty is void unless the attached card is completed and mailed to OWI Inc. within 10 days following the date of purchase. Units must be sent to OWI Inc. or to the dealer where purchased.

MODULE

Description:
Having many of the recent most popular installer features, the AMP4IC6 power module is made to expressly fit onto the OWI Model IC6 coaxial speaker providing a high fidelity module of up to 25 watts of Class AB power right at the speaker. By being within inches of the speaker, the amplifier enjoys maximum damping control of the speaker since the speaker sees optimum low source impedance for maximum high fidelity reproduction. By being a dedicated amplifier to this speaker, it is tailored to match the speaker for optimum response.

Lower Noise Feature, Differential input
The power module has critical features making it a fast and easy install in the field. To reject noise, it has a fully differential amplifier at its input. Also it provides the same kind of noise suppression a transformer does with excellent common mode noise rejection.

Single ended sources (unbalanced) such as CD, DVD
Where the source is single ended such as CD player, plus goes to plus and the shield goes to the minus input. If any noise is observed, place a jumper between minus and ground.

Minimum additional space
The amplifier is molded to fit exactly around the speaker magnet allowing the smallest possible size. It adds barely an eighth of an inch more depth for those tight installations. For convenience the connectors located under the PCB are docking and simply unplug allowing convenient wire attachment.

To further enhance it's ease of installation, each power module has both a second connector for downstream amplifiers and individual volume controls at each amplifier. If no controls are wished at the speaker, simply turn it fully clockwise for maximum gain and set levels at the control electronics.

Wiring to down stream power modules using the provided output connector
Wire Plus to Plus, Minus to Minus, but only connect one end of the shield at the second amplifier module. This will optimize system noise. For third amplifiers etc. follow the same rule; connect all three wires at the farthest module and don't connect the shield at the second connector

Wiring the speakers. - The amplifier is capable of delivering power into either 4 or 8 ohms.
1 speaker – direct
2 speakers – Parallel - Since the speaker is 8 ohms, two in parallel work well
4 Speakers – Use series parallel- Wire speaker pairs in series then take the pairs and place them in parallel. This will provide approximately 6.5 watts per speaker or a maximum of 25 watts. Actually the output power is influenced by the length the wire is run, and wire gauge.

Power source
Power is provided by a 12 volts AC source. There is no polarity on the power input.
If the installer is stuck with only DC, it will work too. Either AC or DC power source will work up to 14 volts. The Power Module AMP4IC6 comes with a 12-volt AC power supply optimized for this amplifier.

Wire gauge

For music applications, where one amplifier is powering one more speaker, use a minimum of 16-gauge wire. For Monday night football bar installations, make the wire gauge as large as possible between speakers.

Low level audio wire runs

Low-level audio needs only 22 gauge twisted pair with shield. Beldon 9451 or equivalent is a popular choice. Being differential, the low level input can be as long as 3500 feet without concern. If the source is unbalanced, a balancing preamplifier is recommended for longer runs over 200 ft.

Powering secondary speakers without amplifiers in paging only applications

For paging applications, voice only, very minimal current is needed therefore 18 gauge in most cases up to 250 ft will be sufficient.

Amplifier Protection

The amplifier is protected from shorts, over heating and will shut itself down until the heat or short is removed. To avoid heat issues, an extra large heat sink is featured on the amplifier.

Loud music installations, dance floors etc.

Provide power at every speaker. Turn their volumes all the way up controlling level at a central location. If a subwoofer is used, crossover at 180 Hz and provide signal the module from 180 Hz and up. A CD output on each channel will power up to 5 power modules. After that, a preamplifier will be needed.

In most cases, particularly if a subwoofer is used, 12.5 watts per speaker will provide excellent sound and that will allow each module to power one more speaker.

OWI INCORPORATED
17141 Kingsview Ave
Carson, CA 90746

Date Purchased: _____
Model Number: _____
Serial Number: _____

(Keep this part for your record)

----------CUT AND MAIL----------

OWI INCORPORATED
17141 Kingsview Ave
Carson, CA 90746

LIMITED WARRANTY
(Self-Amplified Speaker)

Model Number:_____

Model Name: _____

Serial No._____

Date of Purchase: Month: _____ Day _____ Year _____

Owner's Name:_____

Address: _____

City: _____ State _____ Zip_____

Dealer's Name: _____ City_____ State _____

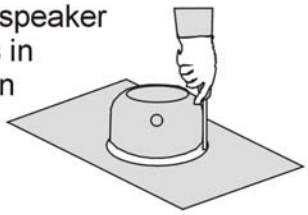
Purchased from (please check one):
Video __, Electronic __, Mail Order __, Mass Merchandiser __, Installer __

Others (please specify) _____
Remarks: _____
_____

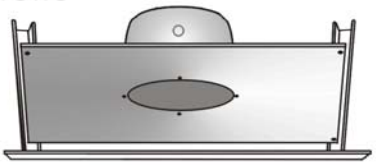
DRYWALL/STUCKO/SHEET ROCKS
CEILING ASSEMBLY

The Quick and Easy Way to Install the OWI TB (Tile Bridge) and the Backcan Enclosure with a 6-1/2" or 5-1/4" OWI In-Ceiling Speaker.

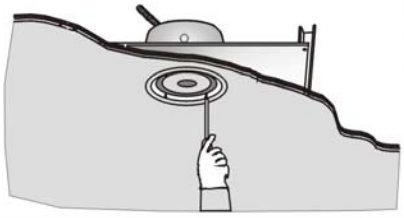
1. Position the enclosure over the speaker and align it with the screw holes in the tile bridge. Insert and tighten 4 screws through the enclosure into the holes on top of the tile bridge.

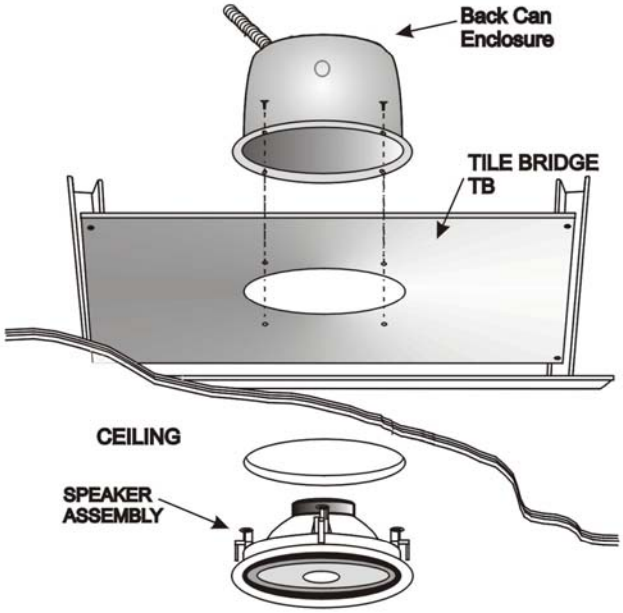


2. Insert and tighten four screws to attach the tile bridge to the beam.



3. After hole is cut in the ceiling, connect the wires and install the speaker by tightening the screws of the Kwik Klamps..





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OWI-BC-TB

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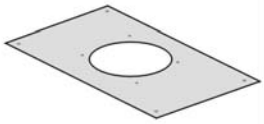
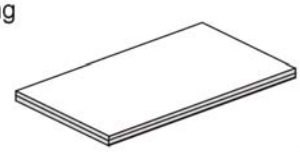
The Quick and Easy Way to Install the OWI TB (Tile Bridge) and the Backcan Enclosure with a 6-1/2" or 5-1/4" OWI In-Ceiling Speaker.

The TB will work on a 2' X 4' , 2' X 2' lay-in type ceilings.

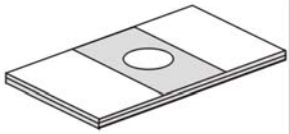
1. Use one tile bridge (TB) as a template to make cut outs for all the ceiling tiles.



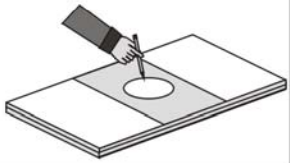
2. To save time, cut 2 ceiling tiles at the same time. Lay the ceiling tile face to face.



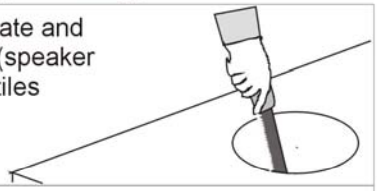
3. After finding the center of the ceiling tile, position the tile bridge template across the tile.



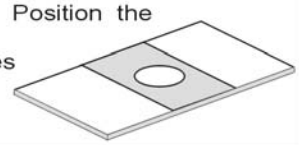
4. Draw a circle using the speaker hole of the template (tile bridge).



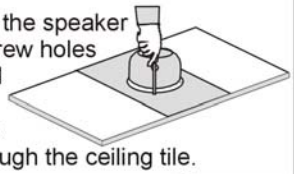
5. Remove the template and saw out the circle (speaker hole). Set ceiling tiles aside.



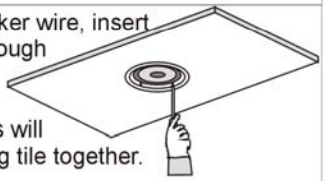
6. Place one ceiling tile face down on the floor or on top of a table. Position the TB tile bridge across the tile with the speaker holes coinciding with each other.



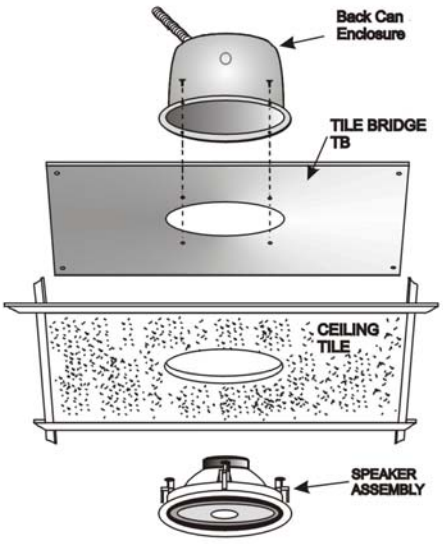
7. Position the enclosure over the speaker hole and align it with the screw holes in the tile bridge. Insert and tighten 4 screws through the enclosure into the holes on top of the tile bridge through the ceiling tile.



8. After connecting the speaker wire, insert the speaker assembly through the hole and tighten the screws of the 4 Kwik Klamps. The Kwik Klamps will hold the TB and the ceiling tile together.



TEE BAR CEILING ASSEMBLY



OWI-BC-TB

IN-CEILING/WALL-MOUNT SPEAKERS
I N S T A L L A T I O N / O W N E R S' M A N U A L

MODEL IC5 / IC6 (NON-AMPLIFIED SPEAKERS)

SPEAKER SPECIFICATIONS:

	MODEL IC5	MODEL IC6
System Description	2-Way Co-Axial Speaker	2-Way Co-Axial Speaker
High Frequency Driver	1/2".Hard Dome Tweeter Ferrofluid cooled	1/2" Hard Dome Tweeter Ferrofluid cooled
Low Frequency Driver	5-1/4" Paper Coated Woofer with Polyurethane Surround	6-1/2" Paper Coated Woofer with Polyurethane Surround
Impedance	8 Ohms	8 Ohms
Sensitivity (1 Watt, 1 Meter)	85.2 dB	86.5 dB
Frequency Response	70Hz - 20kHz	45Hz - 20kHz
Power Rating	20 W Nominal, 40 W Max.	25 W Nominal, 50 W Max.
Recommended Amplifier Power	40 Watts	50 Watts
Dispersion	140^{o}	120^{o}
Size	8" x 2-1/2	9" x 2-1/2"
Cut Out Size	6-5/8"	7-11/16"

INSTALLATION:

Speaker Placement

Before installing your OWI speakers, consider the placement carefully, taking into effect the location of electrical, plumbing and other fixtures.

Placement in Ceiling

OWI speakers should be ideally located above the primary listening area.

Placement in Wall

Optimum sound will be achieved when your OWI speakers are installed at ear level or slightly higher and the listening area is no closer to the speakers than the distance between the speakers themselves.

Mounting your OWI Speakers

Determine the best area to mount your OWI speakers. It will be necessary to run your speaker wires to that location. This location must be free of obstructions, such as electrical conduits, HVAC ducts, or water lines.

Be sure the mounting surface is between 3/8 and 1 1/4 inches thick, and there is at least a 2 3/4 inch clearance behind the mounting surface and no wall studs or other objects block the back of the speaker.

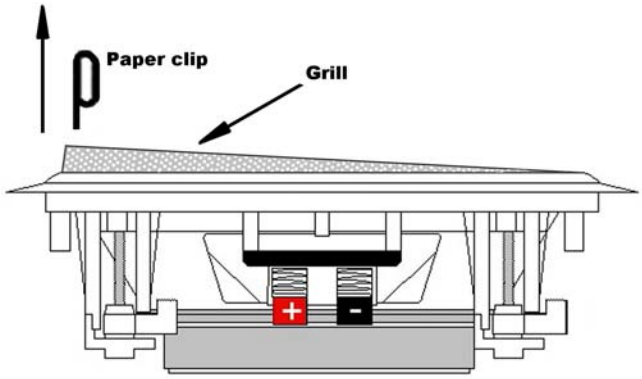
Remove the round cardboard disc from the template supplied and keep it for later use as a paint mask, if you decide to paint your speakers.

Use the template to mark the position for the mounting hole at the selected location. If you are not certain that no obstruction exists (electrical wiring. plumbing. etc.), you should start by cutting a small hole in the center of your penciled mounting hole with a drywall or keyhole saw, cutting at a 45 degree angle towards the inside of the hole. Cutting a small hole at this angle will make drywall repair much easier. Once you have determined there are no obstructions in your desired mounting location, start cutting the finished hole at a 90 degree angle to the wall/ceiling surface.

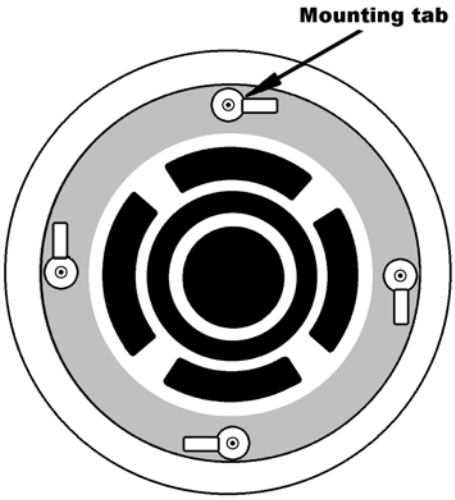
Route the speaker wires from your amplifier to your opening. Avoid routing the speaker wire near electrical wires. If you have to run them parallel, make certain to space the speaker wires at least 2 feet from the AC line. Do not nail or staple the speaker wire.

Preparing your OWI Speakers for Mounting

Insert a paper clip into one of the grille openings, then pull upwards to remove the grille.



Be sure to position the four Mounting Tabs on your OWI speaker inward, then insert the four screws (supplied) from the front of the speaker into the screw opening.



Attach the speaker wires to the speaker terminals.

Insert your OWI speaker into the opening and tighten the four screws. As you tighten the screws, the tabs will automatically flip into an outward position thereby clamping the drywall between the feet and the flange of the speaker. BE CAREFUL NOT TO OVER TIGHTEN, OVER TIGHTENING MAY WARP THE BAFFLE, CRACK THE WALL, CAUSE THE FLANGE TO DISTORT AND MAKE THE GRILL DIFFICULT TO INSTALL.

Push the grille firmly into the slot in the speaker baffle.

Painting your OWI Speakers

The speakers' other surfaces are primed to accept ordinary latex wall paint or aerosol spray paint. The surface of the speaker behind the grille should remain black and must not be painted. It is necessary to mask this area with the center of the template that you have cut out.

The grille can be painted as well, but great care must be taken not to clog the holes in the grille as this will greatly reduce the sound quality of the speakers. It is recommended that only light spray painting using 5 parts thinning agent to 1 part paint be used. Do not paint the grilles while they are attached to the speaker.

Proper Wire Gauge Selection

The gauge of wire required is determined by the distance between your amplifier/receiver and the speakers. Use the following chart as a guide:

Length	**Minimum Gauge**
Less than 10 feet	18 - 20 Gauge
10 to 100 feet	16 to 18 Gauge
Over 100 feet	14 Gauge

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OWI INC.

LIMITED FIVE YEAR WARRANTY
(IC5/IC6 NON-AMPLIFIED IN-CEILING SPEAKER)

1. Your OWI speakers have been thoroughly tested and inspected at the factory. They are warranted for 5 years from the date of purchase. **It is the owner's responsibility to establish the date of purchase by acceptable evidence at the time service is sought.**

2. If the speaker proves to be defective in materials or workmanship within five years from the date of the original customer purchase, OWI, at its sole option may repair or replace the unit with a current model of equal or greater value. In some cases where a new model is substituted, a modification to the mounting surface may be required. If mounting surface modification is required, OWI assumes no responsibility or liability for such modification.

3. Exclusion of certain damages

   Liability for any defective product is limited to repair or replacement of the product at our option. OWI Inc. shall have no liability whatsoever for any incidental or consequential damages of any kind of character because of product defect. **The sole responsibility of OWI Inc. under this warranty shall be limited to the repair of the product or replacement thereof, and is the sole discretion of OWI Inc.** Some states do not allow limitation on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply.

4. This warranty does not cover:

   a. Damage caused by abuse, accident, misuse, negligence, improper operation(installation), overdriven with excessive amplification.

   b. Products that have been altered or modified.

   c. Any product whose serial number has been altered or removed.

   d. Normal wear and maintenance.

   e. Damages caused by shipping. All claims for shipping must be made with the carrier.

5. What OWI Inc. will pay for and what YOU must pay for:

   OWI will repair or replace unit(s) covered by this warranty without charge to the customer for labor or materials. **You are responsible for any installation or removal charges and for any initial shipping charges**, if the unit(s) must be shipped for warranty service. However, OWI Inc. will pay the return shipping charges to any destination within the USA, if the repairs are covered by the warranty.

6. Warranty Service

   Units for warranty repair must be sent to OWI Inc., or to the dealer where purchased, postage prepaid. Copy of original proof of purchase to be included with the speaker(s).